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ABSTRACT

Humor displayed during the administration of a work association test containing a gradually increasing number of sexual double entendres was observed in college students through remote control TV facilities. Persons who hold an internal locus of control smiled and laughed more than externals. Humor was differentiated in three ways: superiority, tension relief, and social. The results suggest that internals are more apt to be amused by the discovery that they have been the object of a jest than externals are. This display of humor, particularly that of superiority humor, was thought to reflect a distance from the immediate demands of the task which if a general characteristic would facilitate the acceptance of evaluative feedback. These results may help in explaining how internals can assimilate negative information without suffering increased anxiety and/or depression. (ST)

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Locus of Control and the Expression of Humor

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Common sense would suggest that a person who customarily attributes cause for his misfortunes to external sources would be less defensive with regard to failure experience than a person who holds himself responsible for his fate. If other persons, or "circumstances" can be blamed for one's mishaps then those failure experiences should not be taken as being self-relevant, and consequently, should be less upsetting and/or eliciting of defensive maneuvers. A series of studies by Phares and his colleagues (Phares, Ritchie & Davis, 1968; Phares, Wilson & Klyver, 1971; Phares, 1971; Davis & Davis, 1972) has evaluated this sensible contention. With but rare exception, persons who hold an external locus of control were found to alter their explanations for task performances on the basis of their outcomes more than persons who held an internal locus of control. Internals were generally less capricious than externals, retaining their interpretations of given tasks regardless of their performance outcomes. Only when there were realistic circumstances present such as distracting noise during concentration demanding tasks, did

internals change in the ways in which they explained their performance.

In the first study (Phares, Ritchie and Davis, 1968) internals were found to have less recall of certain contrived information of a quasi-personal nature than externals. However this recall difference did not vary with the quality of the information, were it flattering or critical. Consequently, there seems to be little support for the suggestion that internals should be more defensive about their failure experiences than externals. In fact, the consistency with which externals eschew the self-relevance of failure experiences suggests that failure may be more disruptive to externals than to internals.

Indirect evidence for this contention can be found in a myriad of investigations containing correlations between locus of control measures and debilitating anxiety, test anxiety, and manifest anxiety (Lefcourt, 1972). In almost every case a more external locus of control is associated with higher scores on scales assessing anxiety and depression. In contrast, the one investigation focussing on positive mood states (Warehime & Woodson, 1971), provides evidence to the effect that internals report more positive affects than externals. Further support for the hypothesis regarding the more disruptive nature of failure for externals derives from the studies by Butterfield (1964) and Brissett and Nowicki (1973). In both studies, internals

were found to report that they react more constructively to frustration than externals.

These findings, while consistent, and congruent with much research in social and comparative psychology (Lefcourt, 1973) are nonetheless paradoxical with regard to the commonsense position noted earlier. How is it, one might ask, that persons who ascribe cause to themselves are more able to assimilate negative feedback without appearing to become defensive or depressed than persons who generally eschew personal responsibility for their performance outcomes.

The present investigation represents an attempt to assay one means by which persons might become better able to cope with evaluative experiences. It is our contention that internals are less at the mercy of immediate experience than are externals, and that this difference derives from distancing mechanisms that are used more often by internals. Examples of such mechanisms that have been explored are the use of personal norms for evaluating present experiences (Deever, 1968), and the tendency to interpret immediate experiences from different perspectives (Lefcourt, Gronnerud & McDonald, 1973; Wolk & Ducette, 1973). Another mechanism that is often cited as a device that both derives from and serves to foster distance from immediate concerns is humor (Mindess, 1971). While not all humor may be said to indicate distancing, certain kinds of humor such as that

associated with mockery are decidedly distance creating devices. The primary target behaviors to be discussed within the present study will be those humor expressions that convey the development of distance. Consistent with the position advanced above, the hypothesis to be tested is that distancing humor will be more characteristic of internals than of externals during an ostensibly evaluative task.

Three kinds of humor responses were assessed for the present study, one of which is "superiority" humor which most clearly reflects the development of distance. A second type of humor is "tension-relief" which indicates surprise or shock, a condition suggesting a rapid change from closeness to distance. The third, "social" humor is more indicative of social approach behavior. These types of humor have been described in some detail by Levine (1969) and Berlyne (1969).

Superiority or "cognitive" humor is described by Arthur Koestler (1964) as occurring when two previously unrelated constructs converge upon some single element. Koestler refers to this process as bisociation and views it as being intrinsic to humor, discovery, and creativity. The mirthful response resulting from bisociation is said to reflect a sense of pride or superiority borne of contrast with others' or one's own recent state of ignorance or naivete - one now

"laughs down" at or draws away from his prior involvement and seriousness.

The hypothesis is that superiority humor will be more common among internal than external subjects during an evaluative task that becomes increasingly provocative; and, that a lesser number of ludicrous provocations will be required to elicit this kind of humor response from internal subjects. Since internals are thought to be quicker at perceiving diverse elements that allow for bisociation, reinterpretation, and the consequent distance from an immediate testing situation, they should be more likely to exhibit superiority humor than are externals. Specifically, internals should display more superiority humor than externals earlier in the task; and this form of humor, characterized by laughing to one's self, should be more evident in general among internal than among external subjects.

Tension-relief humor, distinguished by "nervous" and uncontrolled laughter signals a sudden shift from ease to uncertainty as would occur with surprise. Our hypothesis is that this sort of humor should occasion the first perception of irregularity in our increasingly ludicrous task which may be a necessary antecedent to the development of superiority humor. As such it is predicted that internals will exhibit tension-relief humor earlier than will externals. This difference favoring internals should dissipate rapidly as

internals resolve the uncertainty engendered by the task, and externals belatedly experience surprise. Consequently, externals should exhibit more tension-relief humor than internals in latter periods, and less in the earlier periods of our procedure.

Social humor differs from each of the aforementioned in being irrelevant to the particular characteristics of the given task. This kind of mirth is used to "express approval or disapproval, develop common attitudes, indicate safety or friendship" (Stephenson, 1951). Within the confines of this experiment, social humor would seem to be an attempt to elicit social reinforcement from an aloof experimenter who would otherwise regard the subject as an object to be manipulated. In this sense, social humor represents an effort to gain some control in a situation where control is largely in the hands of another person. Given the instrumental nature of social humor, the hypothesis is that it should be more common among internals than externals at the start of the experimental procedure. With the development of task involvement, however, this form of humor should decrease noticeably such that there should be little between subject differences beyond the early stages of the procedure.

Method

Subjects The S sample consisted of 48 male undergraduate students. An additional six Ss were not used due to technical difficulties with their videotapes. All Ss had completed the Internal-External Control Scale (I-E Rotter, 1966) in classroom sessions, the group mean being 10.16 (SD = 5.57). Ss with I-E scores below 9 were designated internals; those with scores of 10 and above as externals.

Procedure The experiment was described to the Ss as pertaining to cognitive abilities and verbal facility. Each of a series of tasks was administered with reference to the purported intent of finding cognitive factors associated with the development of verbal ability. First among such tasks was the rod and frame measure of field dependence (Witkin, et. al., 1962). Performance on the portable rod and frame device produced a M = 30.98, SD = 16.64. Ss with scores below 26 were designated field independent, 28 and above as field dependent. Subsequently, this score was used as a second independent measure of internality to be employed jointly with I-E. This combination of locus of control and field dependence has afforded good prediction of autonomy related behavior in previous research (Lefcourt & Telegdi, 1971; Lefcourt, Gronnerud, & McDonald, 1973).

The second test administered was the Remote Associates Test (Mednick & Mednick, 1967) for which directions underlined the interest in S's ability at manipulating

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verbal material when granted an unlimited amount of time and privacy.

Subsequent to completing these tests Ss were scheduled for a later appointment. In the second session a word association test was administered with directions stressing the fact that where the previous test (Remote Associates) had illustrated Ss' verbal facility under conditions lacking constraints the concern now was to examine Ss' verbal facility under more demanding conditions. Time was said to be of the essence and that Ss had to create a response to each word with maximum speed. The experimenters showed Ss the equipment which consisted of a voice reaction time instrument calibrated to measure hundreths of a second between the experimenter's reading of the word and the Ss' response.

The list was derived from a word association test previously used to investigate guilt concerning sexuality (Galbraith, Hahn, & Liberman, 1968; Galbraith & Mosher, 1968). The list used in the present study included a series of sexual double entendres, non-sexual words from Galbraith's test and a number of other non-sexual words from the Mental Examiner's Handbook (Wells & Ruesch, 1945). Table 1 presents the list with each double entendre underlined. The double entendres were introduced initially at the thirteenth word and spaced apart by two non-sexual words. At number 24, double entendres began appearing as

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every other word. From the 39th word on, all of the remaining words were double entendres. In this manner the opportunity for bisociation to specific words continually increased. As well, the increasing number of double entendres gradually allowed for bisociative thought processes to occur regarding the experimental purposes themselves. In short, the whole experiment, at some point, could become a joke to the S who had become aware that the task at hand was inappropriate with regard to the originally stated "dry" purposes of investigation.

Insert Table 1 about here

Ss were seated in a well lighted room across from the experimenter who was situated behind a table, surrounded by timing and recording equipment. Approximately a foot behind the experimenter's left shoulder, and eight feet from the S was a one way observation mirror behind which there was a highly light sensitive television camera with a remote controlled zoom lens. The resulting videotaped picture on a 23" high resolution monitor allowed for the observation of a S's face as if he were no further than 3 feet from the observer.

From previous analyses of the resulting data, response times, verbal responses, facial indications of attitude change as well as other observable characteristics were

found to be related to both I-E and field dependence (Lefcourt, Gronnerud, & McDonald, 1973). In general, the more internal the individual on the I-E and rod and frame measures, the more cognitively active he seemed to be. Most pertinent to this current examination of the data was a finding that in one sample segment of the test interaction (the first 16 words administered) internals both smiled and laughed more than externals.

For the present analyses the word association list was divided into five periods, each consisting of 10 words. As may be seen in Table 1, the periods were as follows: I: all non-sexual words; II: every third word is a double entendre (3 double entendres); III and IV: every other word is a double entendre (each contain 5 double entendres); and V: all words are double entendres (10 double entendres in all).

The specific hypotheses were:

1) Superiority humor should increase as the task becomes more clearly a joke (Periods II - V) and this tendency should appear earlier and be most marked in the internal group;

2) Tension-relief should be more obvious among internals at the introduction of double entendres (Periods II and III). This sort of response should quickly diminish for internals and become more in evidence among externals during the later periods (IV -V);

3) The greatest amount of social humor should be in evidence during the early periods (I and II), and such mirth should be exhibited by internals more than externals.

Behavioral manifestations of the three forms of humor are as follows:

1) Superiority: challenging looks - intense with narrowed eyes; pleased or prideful look; pursing of lips - all in the accompaniment of, or immediately preceding, smiles or laughter.

2) Tension-relief: startle (sudden head, eye or body movement); hesitation and uncertainty expressed by strained smile, quizzical facial expression, head tilt, furrowing of brow, fidgetiness, high intensity explosive laugh, head shaking, audible expirations.

3) Social: quality of warmth; eyes wide open; teeth visible, body lean toward experimenter; tendency to exchange extraneous pleasantries - in the accompaniment of smiles or laughter.

Results

The first challenge in assessing the humor data was in establishing reliable judgments for incidents of as well as types of mirth. A sample of 10 female Ss were used for training and the establishment of reliability. Initially a 5 category mirth intensity scale was used (Zigler, Levine, &

Gould, 1967) ranging from negative response through half, full smile and laugh. A low frequency of negative responses and an inability to reliably distinguish between a half and full smile left three usable categories: no response, smile, and laugh. The ratings of two observers for 600 observations containing 135 incidents of mirth produced 95% agreement. Secondly, the categorization of the 135 actual incidents of humor into superiority, tension-relief and social was agreed upon for 85% of the initial judgments. Most disagreements were resolved through discussion, reobservation and ratings with the help of a third rater.

All of the analyses described below are of the unweighted means type since there were unequal Ns between groups (Internal-field independent: 12; Internal-field dependent: 11; External-field independent: 9; External-field dependent: 16). The first analyses of the incidence of smiles and laughs allowed for a check on the previously reported findings favoring internals which was based upon a limited sample of interaction during the word association test. Since no main effects or interactions were obtained with the field dependence variable, it was ommitted from the figures presenting the data obtained with the word association test.

As is evident in figure 1, only one effect was significant with regard to the incidence of laughter.

Internals laughed more often than externals throughout the experiment (F = 5.21, p < .05, 1/44).

Insert figure 1 about here

Smiles likewise were more characteristic of internals than externals (F = 5.79, p<.025, 1/44). However, in this case, the period of testing was also significant (F = 8.38, p<.001, 4/176) as was an interaction between locus of control and period (F = 11.14, p<.001, 4/176). Period differences were determined by the much higher incidence of smiling at the beginning and end of the test (Periods I and V). While internals smiled more often than externals at each period, the difference was most extreme during the final period (p<.001) when double entendres were presented consecutively. During the immediately preceding period (IV) the difference between internals and externals had diminished considerably such that it did not exceed the p<.10 level of confidence. Internals consistently outsmiled externals then, but the mean differences were greatest at the last period and secondly at the beginning of the task (Period 1).

Insert figure 2 about here

As indicated in figure 2, internals tended to exhibit more superiority humor than externals (F = 3.63, $p<.10$, 1/44). Periods were significant (F = 2.84, $p<.025$, 4/176) and there was a near significant interaction between periods and locus of control (F = 2.33, $p<.06$, 4/176). The greatest incidence of superiority humor occurred at different times for internals and externals. Internals behaved as predicted, gradually increasing in superiority humor as the task proceeded, such that the highest incidence occurred toward the end of the list. Externals, on the other hand, exhibited the reverse trend, becoming less likely to show this form of humor as the task progressed. The difference for internals from Period I to V differed significantly in a positive direction ($p<.05$) whereas the negative change for externals was insignificant. Differences between internals and externals were not significant during the first two periods, became significant in Periods III and IV (both $p<.01$), and were most different during Period V ($p<.001$).

The pattern of results for tension-relief humor was not as predicted. Internals exhibited more tension-relief humor in general (F = 5.61, $p<.025$, 1/44), and again, periods produced a main effect (F = 3.74, $p<.005$, 4/175) though there were no significant interactions. The greatest incidence of tension-relief humor occurred, however, at the last period (V), and secondly at the first period (I) contrary to the hypotheses. The lowest incidence occurred

during the third and fourthperiods exactly when an increase in tension-relief humor had been anticipated.

With regard to social humor, internals again exceeded externals as predicted ($F = 8.19$, $p < .01$, 1/44). However, the anticipated interactions with periods were not found. A main effect for periods was evident ($F = 4.95$, $p<.001$, 4/176) deriving from the greater incidence of social smiling at the beginning of the experiment. While the curves in figure 2 indicate that internals accounted for the largest share of social smiling during Period I, externals also did their greatest amount of social smiling at that time albeit at a much lower rate. In general, externals were less likely to produce the friendly, social type of humor especially as the task proceeded through its five stages.

Discussion

The most prominent finding in this study was the rather obvious readiness of internals to become mirthful in a provocative situation. Externals displayed less humor throughout the word association procedure. In contrast, field dependence failed to generate a single main effect or interaction and was therefore omitted from further discussion. With regard to specific types of humor, the hypotheses relevant to superiority and social humor were supported to some degree.

Social humor occurred foremost at the beginning of the word association test, as had been hypothesized, when the experimenter and subject were first settling into the task; and, it was more commonly displayed by internals. This friendly and warm humor is the sort that often causes others to regard an individual as being "good natured", and encourages pleasantness in return. Such differences in demeanor for internals and externals might help to account for the findings that internals receive better hospital treatment than externals following surgery (Johnson, Leventhal, & Dabbs, 1971). These authors interpreted their results as indicating that internals are more able to influence the care received when they are in the more dependent, patient role. In the introduction to this paper social humor was said to be an attempt to gain some control in a situation in which a person is likely to be taken as a passive object. In other words, the greater incidence of social humor among internals during Period I may have reflected an attempt to engage the sympathy of the experimenter when they found themselves in the helpless situation of being an object to be acted upon. Within a hospital, or experiment, internals may be more able than externals to elicit the concern of nursing staffs and experimenters through their expressions of social humor.

More pertinent to the purposes of this experiment, however, were the findings with superiority humor. This

kind of humor, was said to be a distancing kind of mirth, which would occur more frequently and more quickly among internals. The data provided some support for these hypotheses. Superiority humor increased among internals such that they differed significantly from externals by the third period of the task and continued to do so throughout the remainder of the procedure. Externals, in contrast, exhibited superiority humor primarily at the start of the task and decreased in the display of such humor as the task progressed. This early display of superiority humor, before the ludicrous nature of the task became evident, suggests a tendencious sort of response - as if the subject were smirking at the fumbling experimenter who hoped to "get the best of him". When superiority humor occurred later in the task it more probably reflected mockery directed at the humorous situation, a laughing discovery that "one has been fooled and has become aware of the score". Internals may have been as likely as externals to smile derisively at the experimenter as he introduced subjects to their ordeal. However, internals also laughed, and did so more frequently, at the joke that had been perpetrated upon themselves while externals became less mirthful as the facade of the experiment became increasingly implausible.

These data offer support for the contentions regarding the assimilation of negative information. That internals can respond with humor rather than embarassment or

apprehension when they become aware of being a victim of the experimenter's machinations augurs well for the manner in which they might enact other "object" roles - such as being the recipient of evaluational information.

Tension-relief humor, in contrast to superiority and social humor did not occur as hypothesized. Internals exhibited more of this kind of humor than externals throughout the experiment, and the occurrence of tension-relief humor did not coincide with the introduction of double entendres. The two periods in which this form of humor was most common were the first and last. The responses during the first period conceivably reflected the uncertainty attendant upon beginning a new evaluative task whereas the responses occurring during the last period may have been a response to the suddenly unrelenting presentation of double entendres. In any event tension-relief humor was not exhibited in the manner in which it had been predicted. That no increase occurred during the third and fourth periods of the list for either group of subjects raises question as to the utility of this kind of mirth for inferring rapidly developing uncertainty. Nevertheless, the findings that associate locus of control with tension-relief humor do indicate that this more "nervous" humor is not totally dissimilar to the other forms of humor.

As a general conclusion, the data in this investigation reveal that internals are more apt to respond humorously

than are externals. They smile more and laugh more than their external counterparts. Most germane to the original hypotheses were the findings with superiority humor which suggest that the internal can derive amusement from the discovery that he has been manipulated. To exhibit a humor response in such a situation conveys distance from that immediate task and a lesser feeling of vulnerability to judgments deriving from it. Such a response would seem rather useful for facilitating one's acceptance of negative information.

Summary

Humor displayed during the administration of a word association test containing a gradually increasing number of sexual double entendres was observed through remote control television facilities. Persons who hold an internal locus of control were found to both smile and laugh more than externals at different periods of the test. With humor differentiated into "superiority", "tension-relief", and "social" types the period and locus of control variable predicted the occurrence of certain specific humor responses. Field dependence proved to be irrelevant to the criteria in question. Generally, the results suggest that internals are more apt to be amused by the discovery that they have been the object of a jest than are externals. This display of humor, particularly that of superiority

humor was thought to reflect a distance from the immediate demands of the task which if a general characteristic would facilitate the acceptance of evaluative feedback.

These results may help to explain how internals can assimilate negative information without suffering increases in anxiety and/or depression.

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Footnotes

1. This investigation was conducted through the financial support of the Ontario Mental Health Foundation, Grant No. 117.

Table 1

Stimulus Words in the Double Entendre Word Association List

1	fly	11	light	21	sugar	31	measure	41	HUMP
2	face	12	work	22	NUTS	32	BLOW	42	PET
3	plant	13	RUBBER	23	cross	33	garden	43	TOOL
4	voice	14	health	24	MAKE	34	COCK	44	SUCK
5	earth	15	ocean	25	carpet	35	stove	45	BANG
6	miss	16	BUST	26	CRACK	36	MOUNT	46	ASS
7	door	17	fire	27	lamp	37	city	47	BALLS
8	alone	18	watch	28	SCREW	38	QUEER	48	PUSSY
9	good	19	SNATCH	29	paper	39	water	49	BOX
10	ride	20	drink	30	PRICK	40	PIECE	50	LAY

Figure 1

Mean frequency of smiles and laughter occurring
as a function of locus of control and period of testing

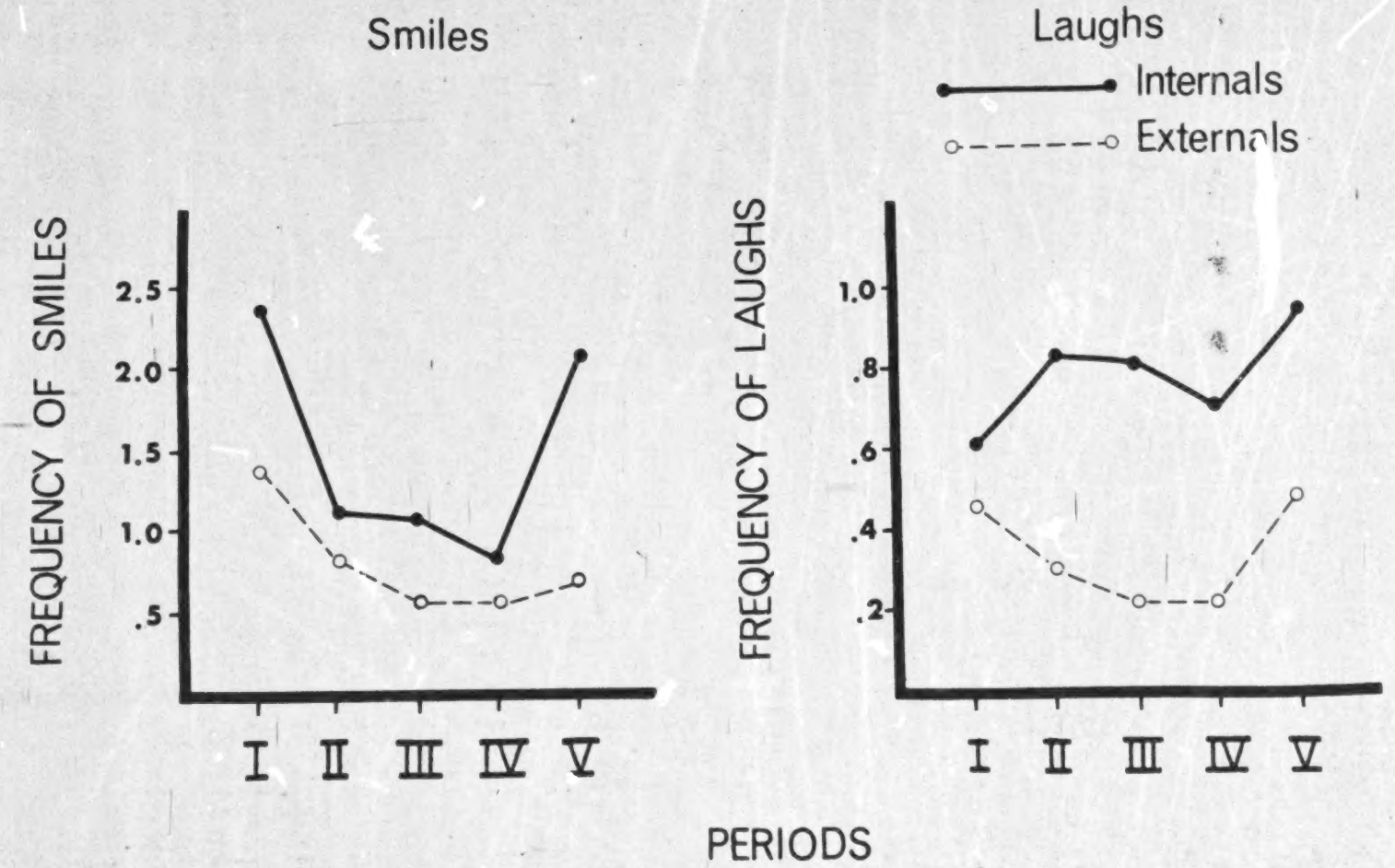
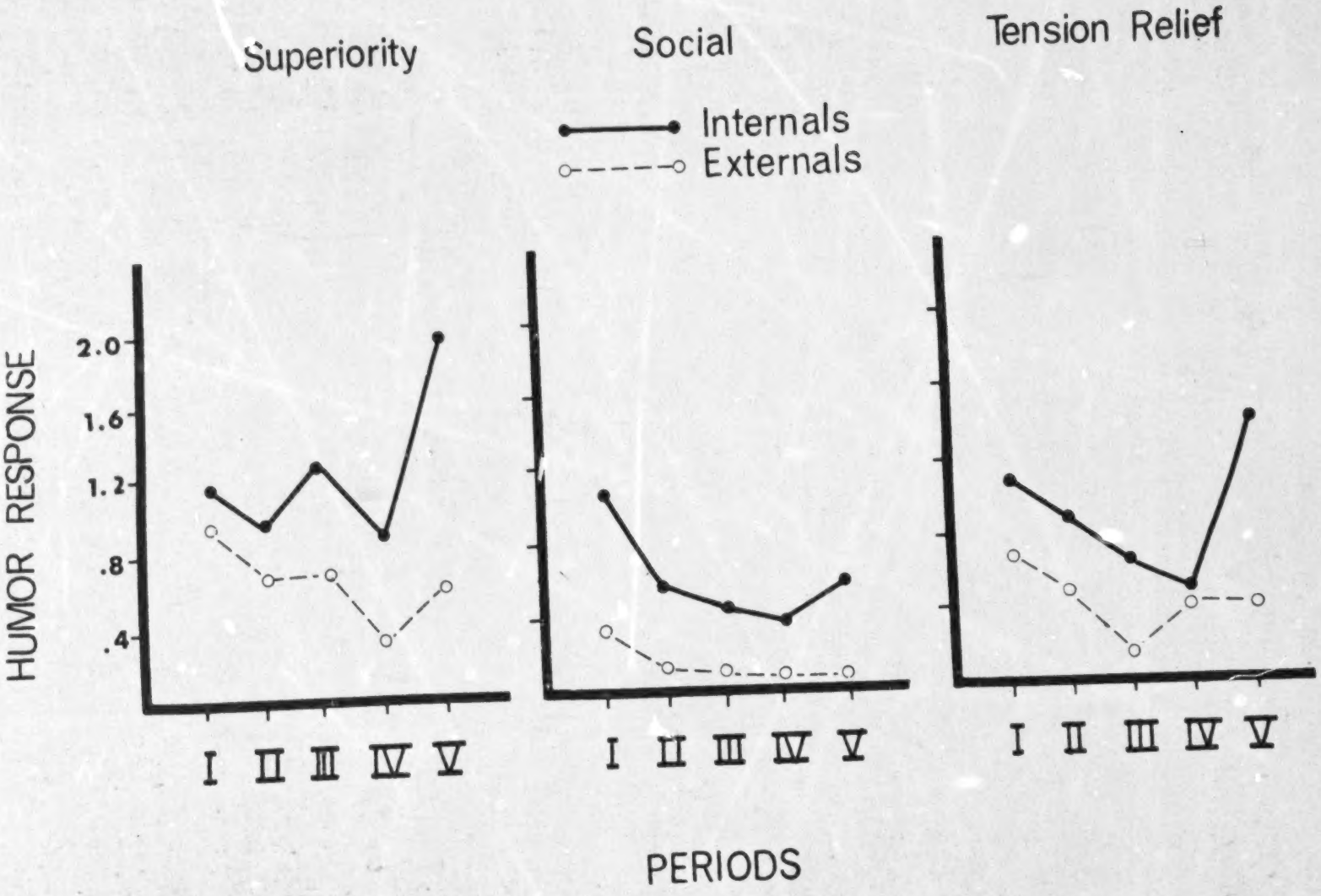

Smiles
Laughs
Internals
Externals
FREQUENCY OF SMILES
2.5
2.0
1.5
1.0
.5
FREQUENCY OF LAUGHS
1.0
.8
.6
.4
.2
I
II
III
IV
V
PERIODS

Figure 2

Mean frequencies of Superiority, Social and Tension-Relief Humor as a function of locus of control and period of testing


Superiority
Social
Tension Relief
Internals
Externals
HUMOR RESPONSE
2.0
1.6
1.2
.8
.4
I II III IV V
I II III IV V
I II III IV V
PERIODS